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AUTHOR Kim, Sun-Hee
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ABSTRACT

This paper addresses the problem of the distribution and interpretation of the Korean long-distance anaphor "caki" and its pronominal counterpart "ku." The first part of the paper reviews previous analyses and shows that the distribution of "caki" and "ku" cannot be fully accounted for in purely structural terms. An alternative analysis is provided within the neo-Gricean theory of implicature. Finally a discussion is provided of some cases where "caki" and "ku" appear to be in free variation. The account provided in this paper, it is argued, can be generalized to cover these cases as well. (Author/JL)

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DIVISION OF LABOR BETWEEN GRAMMAR AND PRAGMATICS CONCERNING ANAPHORA

Sun-Hee Kim

Abstract: This paper addresses the problem of the distribution and interpretation of the Korean long-distance anaphor *caki* and its pronominal counterpart *ku*. The first part of this paper reviews previous analyses and shows that the distribution of *caki* and *ku* cannot be fully accounted for in purely structural terms. I will then provide an alternative analysis within the neo-Gricean theory of implicature (Grice 1975, Horn 1984, Levinson 1991). Finally, I will discuss some cases where *caki* and *ku* appear to be in free variation and argue that the account provided here can be generalized to cover those cases as well.

I. Introduction

Anaphora,[1] which plays a crucial role in the Government-Binding theory,[2] is the phenomenon whereby one linguistic element, lacking clear independent reference, can pick up reference through connection with another linguistic element (Levinson 1987:379, cf. Chomsky 1981, 1986, van Riemsdijk and Williams 1986). Recently it has been pointed out that there are languages with long-distance reflexives, and that in those languages reflexives and pronouns are not always in complementary distribution (Huang 1991, Levinson 1991, Maling 1984, among others). Protagonists of the Government-Binding theory treat this problem either by parameterizing the Binding domain or by proposing LF-movement for long-distance reflexives (Chomsky 1986a, Yang 1983, 1989, see also Yoon 1989 for discussion). On the other hand, there also have been various attempts to re-apportion the burden of account between grammar and pragmatics (Reinhart 1983a, b, Farmer and Harnish 1987, Levinson 1987, 1991).

The purpose of this paper is to propose an account of certain central problems of anaphora within the neo-Gricean theory of implicature (Grice 1975, 1978, Horn 1984, Huang 1991, Levinson 1987, 1991), on the basis of data from Korean. We shall argue that anaphora cannot be fully explained by structural conditions only. Rather, in line with Levinson (1987, 1991), it will be suggested that all we need in our grammar for the account of the distribution and interpretation of

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anaphora, at least in languages like Korean, is grammatically specified conditions for a reflexive. It will then be claimed that everything else is achievable by the systematic interaction of neo-Gricean pragmatic principles, which are further constrained by the Disjoint Reference Presumption (DRP).

We shall begin with a brief presentation of the facts.

II. Basic Properties of the Korean Reflexive

1. Subject orientation[3]: The most prominent characteristic of the major 3rd person reflexive *caki* is that it is coindexed with subjects of NP or S as shown in (1) and (2).[4]

(1) John$_i$-i caki$_i$-lul hyemohanta [5]
John-Nom self-Acc hate
'John$_i$ hates self$_i$.'

(2) na-nun [John$_i$-uy caki$_i$ emma-eytayhan thayto]-lul
I-Top John-Gen self mom-toward attitude-Acc
cohahacianhnunta
like-not
'I don't like John$_i$'s attitude toward self$_i$'s mother.'

(3) a.* na-nun John$_i$-ul-wihay caki$_i$-uy pang-ul chengsohayssta
I-Top John-Acc-for self-Gen room-Acc cleaned
'I cleaned self$_i$'s room for John$_i$'

b. na-nun John$_i$-ul-wihay ku$_i$-uy pang-ul chengsohayssta
I-Top John-Acc-for he-Gen room-Acc cleaned
'I cleaned his$_i$ room for John$_i$'

(4) John$_i$-i Mary$_j$-eykey [e$_j$ caki$_{i/j}$-lul hyemohacimala]-ko
John-Nom Mary-to self-Acc hate-not -that
malhayssta
said
'John$_i$ told Mary$_j$ not to hate self$_{i/j}$'

The ungrammaticality of (3a) is due to the coindexing of *caki* with the non-subject NP *John* . The 3rd person definite pronoun *ku* , on the other hand, does not show Subject Orientation, as in (3b). The coindexing of *caki* with the non-subject NP *Mary* in (4) does not raise

any problem here, since it can be argued that the real antecedent of *caki* is not *Mary* , but the empty element *e* which is the subject of the embedded clause, which is further controlled by *Mary* . Thus the requirement that *caki* should be coindexed with a subject is not violated.

2. No clause-mate requirement: In English, a reflexive and its antecedent must be in the same clause. But in Korean, there is no such clause-mate requirement.

(5) John$_i$-un [Bill$_j$-i caki-$_{i/j}$lul hyemohantanunkes]-ul anta
John-Top Bill-Nom self-Acc hate that -Acc know
'John$_i$ knows that Bill$_j$ hates self$_{i/j}$.'[6]

(6) John$_i$-un [Mary$_j$-ka [caki$_{i/j}$-ka chencay-la]-ko malhankes]-ul
John-Top Mary-Nom self-Nom genius-is-that said-Acc
kiekhanta
remembers
'John$_i$ remembers that Mary$_j$ said that self$_{i/j}$ is a genius.'

(7) John$_i$-i [caki$_i$-ka aphuta]-ko malhayssta
John-Nom self-Nom sick-that said
'John$_i$ said that self$_i$ is sick.'

(8) John$_i$-un [nay-ka caki$_i$-lul cohahanunkes]-ul acikto molunta
John-Top I-Nom self-Acc like that-Acc yet don't know
'John$_i$ still doesn't know that I like self$_i$.'

(9) John$_i$-un [ney-ka caki$_i$-uy chin apeci- lanunkes]-ul moluni?
John-Top you-Nom self-Gen biological father- is that-Acc
don't know-Q
'Doesn't John$_i$ know that you are self$_i$'s biological father?'

The occurrences of *caki* in the above sentences indicate that *caki* can be coindexed with subjects which are outside the clause where it occurs. That is, *caki* can be long-distance bound.

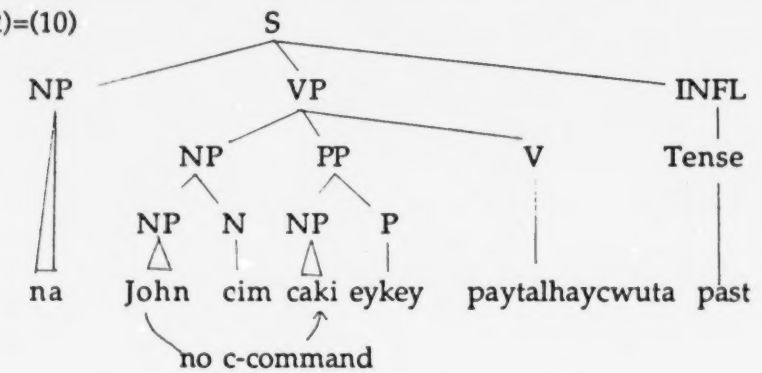
3. C-command requirement: Although *caki* may be coindexed with subjects outside its minimal clause, it is not the case that any subjects are eligible to be its antecedent. It is only c-commanding[7] subjects that can be the antecedent of it.

(10) * nay-ka [John$_i$-uy cim]-ul caki$_i$-eykey paytalhay cwuessta
I-Nom John-Gen luggage-Acc self-to deliver gave
'I delivered John$_i$'s luggage to self$_i$'

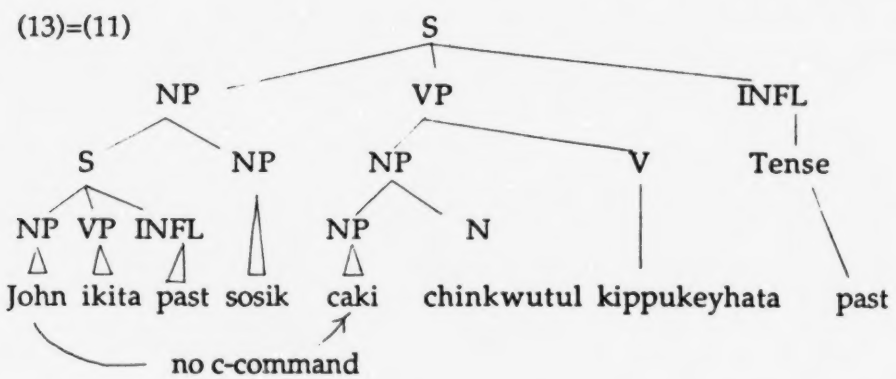
(11) * [John$_i$-i ikiesstanun sosik]-i caki$_i$-uy chinkwutul-ul
John-Nom won news-Nom self-Gen friends-Acc
kippukey hayssta
made happy
'The news that John$_i$ won made self$_i$'s friends happy.'

In the above sentences, the subject NP *John* that *caki* is coindexed with does not c-command it, as illustrated in (12) and (13), respectively. As expected, they are not acceptable.

(12)=(10)



(13)=(11)



In sum, *caki* may be interpreted as coreferential with c-commanding subjects, no matter how far away.

III. Previous Analyses within the GB Framework

At first sight, the properties of *caki* seem to be problematic to Binding Theory, according to which a reflexive must be bound in its governing category. How could *caki* be long-distance bound, if it is a true reflexive? The proposed answer is simple. A reflexive can be long-distance bound if it has no governing category. That is, the absence of a governing category may license a reflexive to be bound across clauses (Yang 1983). This assumption appears to be supported by Korean. It is well known that Korean lacks AGR. Given that governing category is defined as follows:

> @ is the governing category for X if and only if @ is the minimal category containing X, a governor of X, and a SUBJECT accessible to X (van Riemsdijk and Williams 1986:275).

the lack of AGR as a possible governor of *caki* leads to the elimination of the governing category. This analysis , however, is confronted with a serious problem immediately. According to Principle B of Binding Theory, a pronoun must be free in its governing category. If Korean lacks a governing category for reflexive binding due to the lack of AGR, a pronoun should turn out to be free everywhere, given that the governing category of the pronominal disjoint reference principle is identical to the governing category of the reflexive binding within the GB framework (Park 1986).

(14) John$_i$-un Tom$_j$-ul ku$_j$-uy cip-ulo tollyeponaysstа
John-Top Tom-Acc he-Gen house-to sent back
'John$_i$ sent Tom$_j$ back to his$_j$ house.'

(15) John$_i$-un [Mary$_j$-ka ku$_i$-lul cohahanta]-nun kes-ul
John-Top Mary-Nom he-Acc like - thing -Acc
moluko issessta
didn't know
'John$_i$ didn't know that Mary$_j$ liked him$_i$.'

Contrary to expectations, however, the 3rd person definite pronoun *ku* in (14) and (15) is coindexed with a c-commanding NP within the sentence; i.e., *ku* is not free. The anaphor-binding domain and the pronominal disjoint reference domain, therefore, cannot be identical in Korean.

Yang (1983:1) suggests that some of the radical variations in anaphor-binding phenomena across languages naturally follow from Chomsky's original Binding Theory with a minimal parametrization. He parameterizes the notion SUBJECT and AGR for individual languages based on whether a language is marked or unmarked[8] with respect to binding phenomena[9].

Given that Korean lacks AGR and that Korean reflexive is marked by virtue of being long-distance bound, he proposes the following:

1. Reflexives are bound everywhere in a sentence.
2. Pronominals are not bound in the c-domain[10] of their minimal SUBJECTS that contain their governors.
   (i) A is a minimal SUBJECT of B, iff A is the SUBJECT in the minimal category that contains B and a SUBJECT. (B may also count as a SUBJECT.)

Even though this anâlysis might be descriptively adequate, it not only lacks independent motivation, but it also goes against the spirit of the original binding theory, for in the analysis proposed above, there is no overlap between the anaphor-binding domain and the pronominal disjoint reference domain: That is, the basic idea of Chomsky's original theory is that where a reflexive can be coindexed with a given NP, no other pronoun (or NP) can be coreferential with this NP (i.e., anaphors and pronominals are in complementary distribution), and it follows from the notion of the governing category which is uniformly defined both for anaphor-binding and the pronominal disjoint reference principle (Chomsky 1981, Park 1986, Reinhart 1983a).

As an alternative, LF-movement of anaphors has been proposed (Chomsky 1986a, Katada 1991, Yang 1989). The main idea goes as follows: By assuming that X^0 anaphors[11] undergo successive cyclic head movement to the INFL position leaving a trace behind, we can account for why certain anaphors are long-distance bound and why long-distance bound anaphors are subject-oriented. In other words, if X^0 anaphors may move through the spec of CP just like a wh-movement (see Chomsky 1986b), we can account for the fact that X^0 anaphors may be bound from beyond the so-called local binding domain (Yang 1989:436). And if the X^0 anaphor adjoins to INFL as a landing site, the fact that the X^0 anaphor is subject oriented can be readily explained, since the anaphor adjoined to INFL can only be

locally bound by the subject. Binding Principles, which apply to LF representation now would hold not of the antecedent-anaphor relation but of the anaphor-trace relation (Chomsky 1986a:175).

With these modifications, we no longer need to stipulate different governing categories for anaphor-binding and the pronominal disjoint reference. Rather, the seemingly different choice of governing category for anaphors and pronouns follows from their basic binding properties.

This analysis, however, is not without problems. By assuming that X^0 anaphors adjoin to INFL, there is no way to account for exceptions to subject orientation.

(16) na-nun Mary$_i$-loputhe [caki$_i$-ka aphassta]-nun iyaki-lul
I-Top Mary-from self-Nom was sick - story-Acc
tulessta
heard
'I heard from Mary$_i$ that self$_i$ was sick.'

(17) [Mary-ka caki$_i$-lul pinanhayssta]-nun sasil-i John$_i$-ul
Mary-Nom self-Acc criticized - fact-Nom John-Acc
hwanakey hayssta
made angry
'The fact that Mary criticized self$_i$ made John$_i$ angry.'

In the above sentences, the reflexive *caki* is not bound by a c-commanding subject, but by a non-subject NP outside the minimal clause. One might argue that the reflexive *caki* may adjoin to VP instead of INFL, so that it can be c-commanded by the object as well as the subject, under a slight revision of the notion C-COMMAND which may well be required for other cases not discussed here (see Chomsky 1986a:175). But in order to account for the fact that X^0 anaphors are basically subject oriented and that only in certain circumstances[12] may they be coindexed with non-subject NPs, we should stipulate that X^0 anaphors which adjoin to INFL in unmarked cases may adjoin to VP in certain circumstances. Furthermore, it is impossible to isolate syntactic circumstances within which X^0 anaphors do not show subject orientation. Thus we need to consider the possibility of a more general account which can also handle what seems to be problematic to approaches within the GB framework.

IV. Toward a Solution

1. Our starting point in the anaphora question will be to observe that wherever reflexives occur, non-reflexive pronouns are interpreted as non-coreferential, and wherever reflexives are syntactically excluded, the non-reflexive pronouns can have a coreferential interpretation (Sadock 1983, see also Dowty 1980).

The major weakness of the previous analyses rests on the fact that they fail to capture this general property which Korean anaphora shares with other languages, and that they are not able to adequately define the circumstances under which *caki* occurs, excluding the occurrence of the non-reflexive pronoun if a coreferential interpretation is intended, and the (non-syntactic) environments in which *caki* is allowed to be replaced by *ku* without affecting the coreferential interpretation[13].

Consider the following examples:

(18) a. John$_i$-un caki$_i$-lul kkocipessta
John-Top self-Acc pinched
'John$_i$ pinched self$_i$.'

b.* John$_i$-un ku$_i$-lul kkocipessta
John-Top he-Acc pinched
'John$_i$ pinched him$_i$.'

(19) a. John$_i$-i caki$_i$-lul-wihay Mary-lul koyonghayssta
John-Nom self-Acc-for Mary-Acc employed
'John$_i$ employed Mary for self$_i$.'

b.*John$_i$-i ku$_i$-lul-wihay Mary-lul koyonghayssta
John-Nom he-Acc-for Mary-Acc employed
'John$_i$ employed Mary for him$_i$.'

(20) a. John$_i$-un caki$_i$-eykey-cocha nekulepci moshata
John-Top self-to-even generous not
'Speaking of John$_i$, he is not generous even to self$_i$.'

b.*John$_i$-un ku$_i$-eykey-cocha nekulepci moshata
John-Top he-to-even generous not
'Speaking of John$_i$, he is not generous even to him$_i$.'

(21) a. caki$_i$-lul John$_i$-i sinlalhakey piphanhayssta[14]
self-Acc John-Nom severely criticized
'John$_i$ severely criticized self$_i$'

b.*ku$_i$-lul John$_i$-i sinlalhakey piphanhayssta
he-Acc John-Nom severely criticized
'John$_i$ severely criticized him$_i$.'

The (b) sentences are ungrammatical since *ku* occurs where *caki* is syntactically allowed; i.e., the pronoun is c-commanded by the subject NP. If the subject-coreferential reading is not intended, however, the (b) sentences are all acceptable, as expected.

(22) a.*nay-ka John$_i$-ul caki$_i$-uy kapang-ulo ttaylyessta[15]
I-Nom John-Acc self-Gen bag-with hit
'I hit John$_i$ with self$_i$'s bag.'

b. nay-ka John$_i$-ul ku$_i$-uy kapang-ulo ttaylyessta
I-Nom John-Acc he-Gen bag-with hit
'I hit John$_i$ with his$_i$ bag.'

(23) a.*[John$_i$-i Mary-lul-wihay ssun chayk]-i caki$_i$-lul
John-Nom Mary-Acc-for wrote book-Nom self-Acc
kippukey hayssta
made happy
'The book which John$_i$ wrote for Mary made self$_i$ happy.'

b. [John-i$_i$ Mary-lul-wihay ssun chayk]-i ku$_i$-lul
John-Nom Mary-Acc-for wrote book-Nom he-Acc
kippukey hayssta
made happy
'The book which John$_i$ wrote for Mary made him$_i$ happy.'

(24) a.*nay-ka [John$_i$-i ilhepelin kapang]-ul caki$_i$-eykey
I-Nom John-Nom lost bag-Acc self-to
chacacwuessta
found and returned
'I found the bag which John$_i$ lost and returned it to self$_i$.'

b. nay-ka [John$_i$-i ilhepelin kapang]-ul ku$_i$-eykey
I-Nom John-Nom lost bag-Acc he-to
chacacwuessta

found and returned
'I found the bag which John$_i$ lost and returned it to him$_i$.'

(25) a.*John$_i$-uy emma-maceto caki$_i$-lul salanghaci anhnunta
John-Gen mom-even self-Acc love not
'Even John$_i$'s mom doesn't love self$_i$.'

b. John$_i$-uy emma-maceto ku$_i$-lul salanghaci anhnunta
John-Gen mom-even he-Acc love not
'Even John$_i$'s mom doesn't love him$_i$'

The ungrammaticality of the (a) sentences above is due to the fact that the reflexive fails to be bound[16] by the subject. Thus, coreferential reading of the pronoun *ku* with the subject is allowed.

In other words, *ku* is interpreted as noncoreferential with an NP with which *caki* is allowed to be coreferential, and as coreferential when *caki* is excluded. That is, they are in complementary distribution in terms of the coreferential interpretation.

This shows that even though the contrast between the reflexive and non-reflexive pronouns in Korean seems to have quite a different foundation from languages like English (O'Grady 1987) in that governing category has nothing to do with the complementary distribution of the reflexive and non-reflexive pronouns, it may still be the case that Korean syntax contains some mechanism allowing coindexing of the reflexive pronoun with NPs under appropriate syntactic condition, and prohibiting the pronoun from being coreferential with NPs in certain environments. The coindexing and non-coreference condition can be stated roughly as follows.

(26) Coindex a reflexive with a c-commanding subject.[17]

(27) Coreference is impossible if a given subject NP c-commands a non-reflexive pronoun.[18]

However, close examination of (26) and (27) reveals that the non-coreference condition (27) is a precise mirror image of the coindexing mechanism in (26). That is, they have the effect of guaranteeing that whenever coreferential interpretation is syntactically allowed between two NPs, if we do not use this option which the grammar provides, we will get non-coreference (Reinhart 1983a:75). In other words, in

environments that allow a reflexive to occur, we get non-coreference if we instead use a non-reflexive pronoun.

Then (26) and (27) can be restated as follows:

(28) a. An NP c-commanded by a subject should be a reflexive, if coreference is intended.
b. Otherwise, it is non-coreferential.

Given this effect, there is no reason to assume that we need special rules of the grammar to capture this mirror image non-coreference result. It can be achieved through an appeal to a system of pragmatic implicatures (Reinhart 1983a, b, Levinson 1987, 1991), which will be stated below in detail.

Grice (1975) suggests that in our talk exchanges, there is an underlying principle which participants will be expected to observe, namely the Cooperative Principle: Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged (Grice 1975:45). Under this general principle, he establishes four specific maxims such as Quality, Quantity, Relation, and Manner (Grice 1975:45-46).

(29) Quality: Try to make your contribution one that is true.
1. Do not say what you believe to be false.
2. Do not say that for which you lack adequate evidence.

(30) Quantity: 1. Make your contribution as informative as is required (for the current purposes of the exchange).
2. Do not make contribution more informative than is required.

(31) Relation: Be relevant.

(32) Manner: Be perspicuous.
1. Avoid obscurity of expression.
2. Avoid ambiguity.
3. Be brief (avoid unnecessary prolixity).
4. Be orderly.

In Horn (1984), the original Gricean mechanism has been revised. Based on the observation that the first Quantity maxim is essentially

Zipf's Auditor's Economy (i.e. the force of diversification), the second Quantity maxim is akin to Relation, and most of the remaining principles respond to the Zipf's Speaker's Economy (i.e. the force of unification), Horn suggests that all of Grice's maxims (except Quality) can be reduced to two fundamental principles, namely the Q- and R-principles (Horn 1984:12-13; see also Levinson 1987, Huang 1991 for discussion).

(33) a. The Q-Principle (Hearer-Oriented):
Make your contribution sufficient;
Say as much as you can: i.e., Do not provide a statement that is informationally weaker than your knowledge of the world allows, (bearing the maxim of Quality and R-Principle in mind).
Lower-Bounding Principle, inducing upper-Bounding implicata; i.e., a speaker, in saying '—P—' implicates that (for all he knows) '—at most P —'.

b. The R-Principle (Speaker-Oriented):
Make your contribution necessary;
Say no more than you must: i.e., Produce the minimal linguistic information sufficient to achieve your communication ends, (bearing the Q-Principle in mind).
Upper-Bounding Principle, inducing Lower-Bounding implicata; i.e., a speaker, in saying '—P—' implicates that '—more that P—'.

The Q-principle and the R-principle work in opposing directions: The Q-principle would generate the inference of the negation of a stronger reading from the use of an informationally weaker expression (Levinson 1987: 407), while an R-based inference leads to a more informative reading than its logical form suggests. Considering the interaction between the Q- and R- principles, Horn (1984: 22) claims that there is a resolution to the conflict between them, which he labels THE DIVISION OF PRAGMATIC LABOR.

(34) The Division of Pragmatic Labor:
The use of a marked (relatively complex and / or prolix) expression when a corresponding unmarked (simpler, less EFFORTFUL) alternate expression is available tends to be interpreted as conveying a marked message (one which the unmarked alternative would not or could not have conveyed).

1. The R-principle induces a stereotypical interpretation: The unmarked expression E tends to become associated (by use or — through conventionalization — by message) with unmarked situation s, representing a stereotype or salient member of the extension of E / E'.
2. The marked alternative E' Q-implicates the complement of s with respect to the original extension of E / E'.

Horn's proposal above is questioned by Levinson (1987). Levinson insists that a distinction should be made between principles governing an utterance's surface form and principles governing its informational content (see Huang 1991: 5). According to him, the contrast involved in Horn's DIVISION OF PRAGMATIC LABOR is a contrast between marked and unmarked, brief and prolix expressions, and this has nothing to do with quantity of information. Rather, it has to do with an utterance's surface form, so the implicature responsible for this contrast should be attributed to the maxim of Manner; i.e. M-principle. The Q-principle, on the other hand, is claimed to induce a contrastive interpretation between paired expressions of differential semantic strength of informativeness: i.e., The Q-principle operates only on clearly defined contrast sets, of which the Horn scale[19] is prototypical (Levinson 1987: 408, 409). On Levinson's view, the Gricean mechanism can thus be replaced by the following three principles: the Q-principle, the I-principle (Horn's R-principle),[20] and the M-principle (Levinson 1987: 409, 1991: 4-6).

(35) a. The Q-Principle, which takes precedence over other principles, induces a contrastive interpretation from tight contrast sets of equally brief, equally lexicalized linguistic expression ABOUT the same semantic relations.

b. The I-principle induces stereotypical specific interpretations when the Q-principle fails to apply.

c. The M-principle, which overrides the I-principle, induces from the use of a prolix or marked expression an interpretation that is complementary to the one that would have been induced by the I-principle from the use of a semantically general expression.

Given this tripartite classification of general pragmatic principles, we can now reduce the phenomena presented in (28) to some extent. All we need in our grammar for the account of the distribution and

interpretation of Korean anaphora is a coindexing mechanism in (28a). The non-coreference effect in (28b) is then predicted by the Q-principle. That is, the contrast <REFLEXIVE, PRONOUN> forms a Horn-scale, so that the use of a non-reflexive pronoun, an informationally weaker expression, wherever a reflexive is syntactically permitted (i.e. when a given NP is bound by a subject), will Q-implicate a non-coreferential interpretation. When the syntax does not permit a direct encoding of co-referentiality by the use of a reflexive (i.e. when a given NP is not bound by a subject), a non-reflexive pronoun will favor a coreferential interpretation by the I-principle, based on the assumption that a pronoun is an unmarked instance of the coreferential reading[21] (see Levinson 1991: 8-9).

The only relevant syntactic condition for Korean anaphora, therefore, is the following, which can be dubbed SUBJECT ORIENTATION .

(36) Subject Orientation: A reflexive must be bound (i.e. coindexed and c-commanded) by a subject in Korean.

The rest of the facts follow from general pragmatic principles.

2. The crucial difference between the analysis proposed here and a purely syntactic account is that while the latter marks each occurrence of a non-reflexive pronoun c-commanded by a subject as ungrammatical if coreference is intended, the former may allow coreference in such cases if the avoiding of a reflexive is pragmatically motivated (see Reinhart 1983a:77).

Consider the following examples:

(37) John$_i$-un [nay-ka {caki$_i$ / ku$_i$}-lul miwehanta]-ko
John-Top I-Nom self / he-Acc hate -that
sayngkakhanta
think
'John$_i$ thinks that I hate self$_i$ / him$_i$.'

(38) John$_i$-un [nay-ka Tom$_j$-eykey {caki$_i$ / ku$_{i/j}$}-uy sacin-ul
John-Top I-Nom Tom-to self / -Gen picture-Acc
poyecwueyahanta]-ko malhayssta
that said
'John$_i$ said that I should show self$_i$'s / his$_{i/j}$ picture to Tom$_j$.'

(39) John$_i$-un [{caki$_i$ / ku$_i$- ka salang-ey ppacyessta]-ko malhayssta
John-Top self / he -Nom love-in fell -that said
'John$_i$ said that self$_i$ / he$_i$ was in love.'

The sentences (37)-(39) are apparent counter-examples to our analysis, for the use of the non-reflexive pronoun *ku* , when the reflexive *caki* is syntactically allowed, does not make any difference in reference: *caki* and *ku* seem to be in free variation, contrary to the tendency for anaphors and pronominals to be in complementary distribution. However, if we can show that there are systematic reasons why a Q-implicature fails to arise just in these cases, the above sentences would no longer be a problem.

Considering such phenomena cross-linguistically, Kuno (1972, 1987) points out that even though both a reflexive and a pronoun refer to the same individual, there are still subtle meaning differences expressed by choosing a reflexive or a pronoun[22] (see Kuroda 1973). He argues that the neutralization of the opposition between a reflexive and a pronoun is only at the level of reference; there remains a semantic / pragmatic contrast, which he claims to be one of POINT OF VIEW: The reflexive pronoun may require that the speaker take its referent's point of view while the non-reflexive pronoun allows the normal, deictic, objective point of view (see Kuno and Kaburaki 1977, Levinson 1991).

For instance, in (37)-(39), if the speaker describes the sentences by assuming the matrix subject *John* 's point of view; i.e. if the speaker identifies himself with *John* (see Chang 1977, DeLancey 1981), the element bound to *John* should be realized as a reflexive *caki* . On the other hand, if there is no identification between the speaker and *John* ; i.e. if the speaker utters the sentences from an objective point of view, the element bound by *John* may turn out to be *ku* . The possible coindexing of *ku* with the non-subject NP *Tom* in (38) does not require any alternation of the point of view, because in this environment, a reflexive is not syntactically allowed: The occurrence of *ku* I-implicates a coreferential interpretation as expected.

Thus the above examples show that although *caki* and *ku* appear to be in free variation on a superficial level, their semantic / pragmatic environments are still distinct: *ku* is used when there is no identification between a speaker and its referent, while *caki* is chosen when its referent's point of view is adopted by the speaker with respect to the sentence. As a result, even though the sentences where *ku* is interpreted as coreferential with a c-commanding subject are supposed

to be ruled out by Q-implicature, avoiding the choice of a reflexive pronoun where there exists no identification of a speaker with its referent is pragmatically motivated and coreference is not excluded.

Things get more complicated when we note that we not only obtain a pronoun when a reflexive is expected, but we also have the occurrence of a reflexive where it is not syntactically permitted.

Observe the following data:

(40) a. [caki$_i$-ka Mary$_j$-lul ttaylyessta]-nun sasil-i John$_i$-ul
self-Nom Mary-Acc hit - fact-Nom John-Acc
koylophyessta
worried
'The fact that self$_i$ hit Mary$_j$ worried John$_i$.'

b.*[John$_i$-i Mary$_j$-lul ttaylyessta]-nun sasil-i caki$_j$-lul
John-Nom Mary-Acc hit - fact-Nom self-Acc
koylophyessta
worried
'The fact that John$_i$ hit Mary$_j$ worried self$_j$.'

(41) a. [John$_i$-uy mitum]-un [caki$_i$-ka yongkamhata]-nun kes] ita
John-Gen belief-Top self-Nom brave - is
'Speaking of John$_i$'s belief, it is that self$_i$ is brave.'

b.*[caki$_j$-uy mitum]-un [John$_i$-i yongkamhata]-nun kes ita
self-Gen belief-Top John-Nom brave - is
'Speaking of self$_j$'s belief, it is that John$_i$ is brave.'

According to the Subject Orientation Condition stated in (36), *caki* in (40a) and (41a) is not a bound anaphor, for it is not c-commanded by any subject NP. Nevertheless, coreference is not excluded. The account based on the alternation of the point of view does not help us here, due to the following data:

(42) * [Mary$_i$-ka caki$_j$-lul cohahanta]-nun somun-i John$_j$-ul
Mary-Nom self-Acc like - rumor-Nom John-Acc
yumyenghakey mantulessta
made famous
' A rumor that Mary$_i$ likes self$_j$ made John$_j$ famous.'

(43) * [caki$_i$-ka Mary$_j$-lul cwukyessta]-nun sasil-i John$_i$-ul
self-Nom Mary-Acc killed - fact-Nom John-Acc
akmyengnopkey hayssta
made notorious
'The fact that self$_i$ killed Mary$_j$ made John$_i$ notorious.'

If we assume that a speaker can take the matrix object *John* 's point of view in (40a),[23] because it is the easiest NP for a speaker to empathize with in that sentence, there being no human matrix subject NP (see Kuno 1976, Kuno and Kaburaki 1977, among others), and if we further assume that this is what is responsible for the coreferential interpretation of *John* and *caki* , we have no reason to rule out (42)-(43) as ungrammatical, since they have exactly the same structure as (40a). Close observation of the above cases, however, may reveal that there is something common to (40) and (41) which is not shared by other sentences: The former involves psychological predicates while the latter does not. *caki* can corefer to *John* when *caki* occurs in a complement that represents the internal feeling of the main clause experiencer *John* , as in (40a) and (41a): i.e., *caki* can be coreferential with a non-c-commanding, non-subject NP whose mental state or attitude is being reported (see Sells 1987). The ungrammaticality of (40b) and (41b) may then be attributed to the fact that the order of *caki* and *John* is reversed: *caki* does not occur in a complement which depicts psychological states of the experiencer. So *caki* fails to get licensed. In the case of (42) and (43), there is nothing which can save them from being ruled out, given that *caki* is not c-commanded by a subject NP, and that they do not involve psychological predicates.[24]

There is actually one more instance of *caki* which we need to take care of:

(44) a. John$_i$-un Bill$_j$-loputhe [caki$_{i/j}$- ka tayhak iphaksihem-ey
John-Top Bill-from self-Nom college entrance exam.
hapkyekhayssta]-nun iyaki-lul tulessta
passed story-Acc heard
'John$_i$ heard from Bill$_j$ that self$_{i/j}$ passed the college entrance exam.'

b. John$_i$-un Bill$_j$-eykey [caki$_{i/*j}$-ka tayhak iphaksihem-ey
John-Top Bill-to self-Nom college entrance exam
hapkyekhayssta]-nun iyaki-lul hayssta
passed story said
'John$_i$ told Bill$_j$ that self$_{i/*j}$ passed the college entrance exam.'

caki in (44a) is ambiguous between being coreferential with the c-commanding subject *John* and coreferring to *Bill* , whereas the reflexive pronoun is unambiguously coreferential with the matrix subject *John* in (44b). Coreference between the subject *John* and *caki* is not our concern here, for it is predicted by the Subject Orientation Condition. Then why is it the case that *caki* can be coreferential with *Bill* in (a), while coreference is not allowed in (b) sentence? The only difference between (a) and (b) sentences is that in (a), it is *Bill* who actually said the embedded sentence, but in (b), it is *John* who uttered it. That is, *Bill* is the source of the report in (a), but not in (b).

If it is *Bill* 's being a SOURCE OF THE REPORT that is responsible for coreference between *caki* and *Bill* in (44a), we can now factor out three semantic / pragmatic ingredients which seem to license the occurrence of the reflexive pronoun *caki* in Korean (see Sells 1987): (i) the point of view assumed by a speaker with respect to sentences, (ii) one whose internal feeling is being reported, (iii) the source of the report. In Sells (1987), it is pointed out that these three notions, which he labels PIVOT, SELF, SOURCE respectively, underlie what is called LOGOPHORICITY.

The notion of logophoricity was introduced in studies of African languages, where there are special anaphoric pronouns, called logophoric pronouns, which refer to the individual whose speech, thoughts, or feelings are reported or reflected in a given linguistic context in which the pronouns occur (Clements 1975:141); and the logophoric use of long-distance reflexive pronouns has been observed in a number of languages such as Latin, Greek, Japanese, Icelandic, etc. (Clements 1975, Kuno 1987, Sells 1987, among others).

If, as Sells (1987) claims, logophoric phenomena are a result of the interaction of the three notions Pivot, Self, Source, and if they are the semantic ingredients which license the occurrence of the reflexive pronoun *caki* in Korean as discussed above in detail, we can say that what is suggested by the use of the reflexive in Korean may be a contrast with the ordinary, non-logophoric interpretation. In other words, the meaning of *caki* has a logophoric aspect. Such being the case, the occurrence of *ku* with a coreferential interpretation where *caki* is syntactically allowed does not necessarily result in the failure of Q-implicature. In those cases, *ku* may be used in order to avoid the logophoric reading of *caki* : The choice of *ku* can Q-implicate non-

logophoricity rather than a non-coreferential interpretation (see Levinson 1991 for discussion based on cross linguistic data).

Given the observation so far, we suggest that *caki* imposes two special conditions : (i) syntactically, it must be bound (i.e. coindexed and c-commanded) by a subject, and (ii) semantically, it is interpreted logophorically. *caki* does not require that both conditions be met in order for it to occur. Rather it requires a disjunction of the conditions: If one condition is met, the occurrence of *caki* is licensed, as shown with respect to the discussion of Self and Source in (40)-(44).

Therefore, the use of *ku* always implicates that *caki* could not have been used: This means either that coreference is not intended, or that its logophoric meaning is absent.

3. Our remaining task is to account for why a logophoric contrast does not arise in a minimal clause like (45):

(45) a. John$_i$-un caki$_i$-lul hyemohanta
John-Top self-Acc hate
'John$_i$ hates self$_i$.'

b. John$_i$-un ku*$_{i/j}$-lul hyemohanta
John-Top he-Acc hate
'John$_i$ hates him*$_{i/j}$.'

(46) a. John$_i$-un [nay-ka caki$_i$-lul hyemohanta]-ko sayngkakhanta
John-Top I-Nom self-Acc hate -that think
'John$_i$ thinks that I hate self$_i$'

b. John$_i$-un [nay-ka ku$_{i/j}$-lul hyemohanta]-ko sayngkakhanta
John-Top I-Nom he-Acc hate -that think
'John$_i$ thinks that I hate him$_{i/j}$.'

The use of *ku* in (45b) Q-implicates only a non-coreferential interpretation, whereas *ku* in (46b), which is bound outside the minimal clause, Q-implicates either non-coreference, or non-logophoricity. The question which immediately arises is, then, why the use of *ku* fails to allow the inference of non-logophoricity in (45b), where the pronoun is bound inside its minimal clause.

Let us compare the following data:

(47) a. John$_i$-un [caki$_i$-uy emma]-lul hyemohanta
John-Top self-Gen mom-Acc hate
'John$_i$ hates self$_i$'s mom.'

b. John$_i$-un [ku$_{i/j}$-uy emma]-lul hyemohanta
John-Top he-Gen mom-Acc hate
'John$_i$ hates his$_{i/j}$ mom.'

The above sentences particularly interest us, since the occurrence of *ku* can Q-implicate non-logophoricity even though both the antecedent and the pronoun are clausemates just like (45b). The only difference between (45b) and (47b) is that while in the former the pronoun occurs in an argument position, in the latter the pronoun occupies an adjunct position. That is, we may have a contrast in logophoricity even in the minimal clause as long as the antecedent and the pronoun are not co-arguments. Given this fact, we no longer need to assume that the meaning of *caki* has a logophoric aspect only when *caki* is bound long-distance. Rather, we can say that the absence of a logophoric contrast in the minimal clause, when the antecedent and the pronoun are co-arguments, is attributed to the fact that our pragmatic implicatures are further constrained by some principle like the Disjoint Reference Presumption (DRP), which says that the arguments of a predicate are intended to be disjoint (Farmer and Harnish 1987: 557, see also Huang 1991 for discussion). Farmer and Harnish claim that the DRP is of a pragmatic nature, without clearly explaining why it should be so. In Levinson (1991) and Huang (1991) it is convincingly argued that the DRP is pragmatic, since it is based upon world knowledge : The fact that one entity tends to act upon another entity is due largely to the way the world stereotypically is (Huang 1991: 20). The DRP formulated as above works fine for most transitive verbs. However, there is a small group of verbs, among them *shave* , *bathe* , *wash* , and *dress* , which are dubbed INTROVERTED PREDICATES by Haiman (1985:168ff), for which the DRP makes a wrong prediction. That is, verbs of this class denote actions that one usually performs on oneself, and it is this class of verbs whose reflexive object is typically expressed by zero (Haiman 1985:169):

(48) John shaved ___ .
=John shaved himself.
≠John shaved him.

But,

(49) John killed ___ .
≠John killed himself.
=John killed him.

If it is the case that co-arguments tend to be disjoint in reference, as predicted by the DRP, there is no way of accounting for the fact that the zero object of the introverted verbs are intended to be coreferential with the subject, without an extra stipulation. In other words, it seems that we face two types of preferred interpretation with opposite directions: i.e. a coreferential reading for introverted predicates, and a disjoint reference reading in the case of other transitive verbs (i.e. extroverted predicates). Given this observation, we need to modify the DRP to the extent that it only works for extroverted predicates, so that the zero object of introverted predicates will still favor a coreferential reading with a subject, although the subject and the zero object are co-arguments:

(50) Disjoint Reference Presumption (revised): The overt arguments of a predicate are intended to be disjoint.

The interaction of the DRP with other pragmatic implicatures can be presented as follows: Since our grammar allows a direct encoding of a coreferentiality by the use of a reflexive pronoun *caki* , we get coreference between *John* and *caki* in (a) sentences, the DRP being not in operation, and *caki* may be interpreted logophorically. In (45b) the use of *ku* where *caki* is allowed will Q-implicate either non-coreference or non-logophoricity. If a non-logophoric reading arises by Q-implicature, however, it will be overriden by the DRP, resulting in a non-coreferential interpretation; thus lack of a logophoric contrast in this sentence. In (46b), on the contrary, we get either non-coreference, or non-logophoricity, since *John* and the pronoun being not co-arguments, the DRP is not in operation. The pronoun *ku* occurs in an adjunct position in (47b), and either non-coreference or non-logophoricity arises by Q-implicature. If a non-logophoric reading arises, it will go through unblocked, for the DRP says nothing about adjuncts; resulting in a contrast in logophoricity.

Therefore, armed with general pragmatic implicatures and the Disjoint Reference Presumption stated in (50), which constrains the implicatures, we can now give a full account of the distribution and interpretation of Korean anaphora.

V. Concluding Remarks

In this paper, it has been argued that any theory based only on structural conditions is not adequate for the account of anaphora at least in languages like Korean. As an alternative, it has been suggested that given a grammatically specified condition for a reflexive, Subject Orientation, we can reduce the non-coreference effect through an appeal to general pragmatic principles such as the Q- and I-principles. The reflexive pronoun in Korean shows a logophoric aspect, which does not come as a surprise, *caki* being long-distance bound. Therefore, it has been claimed that *caki* requires either that it be bound by a subject, or that it be interpreted logophorically. Then the use of the non-reflexive pronoun *ku* will be warranted only if the speaker wishes to avoid coreference with a subject NP, or logophoricity, or both (see Levinson 1991:19).

It is well known that languages that have long-distance reflexives in general allow reflexives to be discourse bound. Given that Korean is a discourse-oriented language, it seems to be the case that a salient element in a discourse may end up binding discourse anaphora. However, we are not in a position to say what the nature of discourse binding of anaphora might be. Further research is warranted.

NOTES

1 By definition, anaphora includes NP-anaphora, i.e. reflexives, zero-anaphor, and pronominal anaphora. In this paper, we shall concentrate on NP-anaphora and pronominal anaphora.

2 Within the GB framework, anaphora is treated by the following conditions, i.e. the Binding Principles:

A) An anaphor is bound in its governing category.
B) A pronominal is free in its governing category.
C) R-expressions must be free.

3 Throughout this paper, *subject* refers to SUBJECT in the sense of van Riemsdijk and Williams (1986:275), which is structurally

defined as [NP, NP] or [NP, S], where [X, Y] means 'the X immediately dominated by Y'.

4 The apparent counter-examples to this condition will be discussed in section 4.2.

5 All Korean examples are transcribed using Yale Romanization. Abbreviations include: Top—Topic marker
Nom—Nominative marker
Acc—Accusative marker
Gen—Genitive marker.

6 Here it seems that *caki* is also allowed to be coindexed with the Topic NP, *John* . However, the following sentences show that it is not Topichood which makes *John* eligible to be the antecedent of *caki* .

a. John$_i$-un Mary$_j$-lul caki$_i$/*$_j$-uy ciphangi-lo ttaylyessta
John-Top Mary-Acc self -Gen stick-with hit
'John$_i$ hit Mary$_j$ with self$_i$/*$_j$'s stick.'

b. John$_i$-un Mary$_j$-ka caki*$_i$/$_j$-uy ciphangi-lo ttaylyessta
John-Top Mary-Nom self -Gen stick-with hit
'Speaking of John$_i$, Mary$_j$ hit him$_i$ with self*$_i$/$_j$'s stick.'

Even though *John* in both (a) and (b) is the Topic of the sentence, only the Topic derived from the subject as in (a) can bind *caki* . In other words, *caki* is coindexed with *John* not because it is the Topic, but because it is the underlying subject. Thus, there is no violation of subject orientation (see Kameyama 1984:228).

7 A c-commands B if and only if the first branching node dominating A also dominates B, and A does not itself dominate B (van Riemsdijk and Williams 1986:142).

8 The reflexives across languages that obey the same anaphor-binding principle as the reciprocals, like English reflexives, will be called UNMARKED REFLEXIVES. All the reflexives across languages that are not unmarked will be called MARKED (Yang 1983:176, 178).

9 We shall not go into details of his analysis.

10 A is the c-domain of B iff A is the minimal maximal category dominating B (Manzini 1983: 422).

11 An X^0 anaphor is a non-compound anaphor which consists of a morpheme indicating SELF alone, whereas an XP anaphor is a compound anaphor which consists of a pronoun and a morpheme indicating SELF (Yang 1989: 449). An X^0 anaphor is long-distance bound and subject-oriented, but an XP anaphor is locally bound and not subject-oriented.

12 We shall get to this problem in section 4.2.

13 Not only Korean but also English has this phenomenon; e.g. picture noun reflexives: A reflexive and non-reflexive pronoun appear to be in a free variation on the syntactic level. But actually the pragmatic environments in which they occur are still distinct, confirming the assumption that reflexive and non-reflexive pronouns are in complementary distribution. This is the direction we shall explore in what follows.

14 This sentence is a result of so-called SCRAMBLING. Whatever structure we assign to this sentence, *John* is c-commanded by a pronoun, making the wrong prediction about grammaticality: i.e., a pronoun c-commanding NP should be disjoint in reference with the NP it c-commands. Therefore, we should either assume that Binding Principles are applied before scrambling takes place, or assume that Binding Principles hold of the antecedent-trace relation, trace which is left behind as a result of scrambling. The choice of one assumption over the other, however, is beyond the scope of this paper.

15 Unlike English, in Korean the reflexive *caki* can occur in a determiner position: i.e., caki-genitive is O.K. in Korean.

16 An NP is said to be bound if it is coindexed with a c-commanding NP.

17 This coreference rule is language-specific.

18 Interpretation of the non-reflexive pronoun where the reflexive cannot occur seems to be a matter of preferred interpretation (Levinson 1987: 413). This is because even though a pronoun c-commanded by an NP may be treated as a bound variable, just as a reflexive is a bound variable, sentence-level grammar has nothing to say about the interpretation of optionally coreferring pronouns

(Reinhart 1983a). Thus, we attribute this to semantics and pragmatics instead of to syntax.

19 For two linguistic expressions S and W, where S is informationally richer than W, to constitute a Horn Scale, the following constraints must be met:

(i) A(S) must entail A(W) for some arbitrary sentence frame A;
(ii) S and W must be EQUALLY LEXICALIZED (hence no Horn Scale <iff, if> to block CONDITIONAL PERFECTION).
(iii) S and W must be ABOUT THE SAME SEMANTIC RELATIONS, or from the same semantic field (hence no scale <since, and > to block CONJUNCTION BUTTRESSING (Levinson 1987: 407).

20 Levinson calls the Quantity 2 the Principle of Informativeness (the I-principle) instead of the Principle of Relevance (the R-principle), since he believes that relevance is not primarily about information - relevance is a measure of timely helpfulness with respect to interactional goals (Levinson 1987:401). The choice of one over the other, however, need not concern us here.

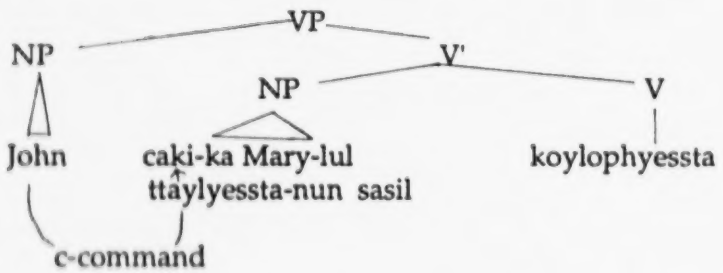
21 Our discussion is deliberately limited to reflexives and pronouns, for R-expressions in Korean are not free everywhere: i.e., The use of R-expressions does not necessarily M-implicate disjoint reference. Due to lack of data, we are not in a position to say when M-implicature can be cancelled. Further research is needed.

22 All of my informants share the intuition that *caki* is used when a speaker empathizes with its referent, conveying the meaning of RATHER THAN ANYONE ELSE. On the contrary, the use of *ku* seems to indicate that the given sentences are objective description of facts.

23 Actually we need a more refined notion of the POINT OF VIEW or EMPATHY. If it is the case that a speaker can assume any NP's point of view, regardless of the type of predicates, according to the Surface Structure Empathy Hierarchy proposed in Kuno (1976) and in Kuno and Kaburaki (1977), we have no reason to mark (42) and (43) as ungrammatical, because it can be argued that the highest NP in terms of the hierarchy is empathized with, so *caki* can be coreferential with an empathized-with NP *John* in these cases. If *caki* requires a conjunction of the Subject Orientation Condition and the logophoric

aspect (to which we shall turn shortly), there arises no problem here, given that *caki* in (42) and (43) is not bound by a subject. But *caki* seems to require a disjunction of them, as will be illustrated in what follows. Therefore, we need to say that a speaker can take the subject's point of view only, unless given sentences involve psychological predicates or a source of the report (which will be discussed below), so as to allow the speaker to take the point of view of the person who is the source of the report or whose mental state is being reported. Further research on this issue is needed.

24 An anonymous reviewer comments that the possibilities of a syntactic basis for a treatment of anaphor-binding in psych verb constructions have not been exhausted. For example, following Belletti and Rizzi (1988: 312-313), we can argue that in a sentence like (40a) the experiencer in object position can bind an anaphor contained within the subject because the c-command requirement on the antecedent-anaphor relation is met in the D-structure representation which has the following form (see Belleti and Rizzi 1988 for a detailed discussion):



The ungrammaticality of (40b) would then be expected, for the c-command requirement on the antecedent-anaphor relation is not met at any level of representation. But we still need to account for why the Subject Orientation Condition is not respected in these cases.

25 Chomsky (1986a) proposes the relativization of the governing category as follows:

> A governing category is a complete functional complex (CFC) in the sense that all grammatical functions compatible with its head are realized in it - the complements necessarily, by the projection principle, and the subject, which is optional unless required to license a predicate, by definition ... the relevant governing category for an expression @ is the least CFC containing a

> governor of @ in which @ could satisfy the binding theory with some indexing (perhaps not the actual indexing of the expression under investigation) (Chomsky 1986a: 169-171).

Thus, the clause is the relevant governing category for the anaphor in (47a), whereas the NP *ku-uy emma* 'his mom' is the relevant governing category for the pronoun in (47b). Under this version of binding theory, the fact that both the anaphor *caki* and the pronoun *ku* can be bound by the subject *John* in (47) is readily explained. (I am indebted to an anonymous reviewer for this observation.) This account, however, does not extend to the cases where the anaphor and the pronoun are not in complementary distribution although the relevant governing category for them is exactly the same.

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